In The Claims

Applicant submits below a complete listing of the current claims, including marked-up claims with insertions indicated by underlining and deletions indicated by strikeouts and/or double bracketing. This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims

1. (Previously Presented) A method for controlling an electromagnetic field generation terminal using a signal for exciting an oscillating circuit, provided with means for regulating a signal phase in the oscillating circuit, including comparing present values of variables linked to the current in the oscillating circuit and to the voltage across the oscillating circuit with predetermined values, to detect the presence of a transponder in the electromagnetic field,

wherein said presence detection is implemented when a demodulator included in the terminal detects no signal transmitted by a transponder.

2. (Original) The method of claim 1, wherein said predetermined values are measured and stored during an off-load operation of the electromagnetic field generation terminal, while no transponder is present in its field.

3. (Cancelled).

4. (Previously Presented) The method of claim 1, including, in case of the detected presence of a transponder:

deactivating a phase regulation; and

forcing an imaginary part of an impedance of an oscillating circuit of the electromagnetic field generation terminal to a predetermined value.

5. (Original) The method of claim 4, wherein forcing said imaginary part is performed by forcing a value of a variable capacitive element of the oscillating circuit.

6. (Original) The method of claim 4, applied to a terminal provided with an amplitude demodulator, wherein the predetermined value of forcing of said imaginary part corresponds to an off-load operation of the terminal.

7. (Original) The method of claim 4, applied to a terminal provided with a phase demodulator, wherein the predetermined value of forcing of said imaginary part is a function of the position of this imaginary part with respect to a limiting value corresponding to an off-load operation of the terminal.

8. (Previously Presented) The method of claim 1, including, in case of the detected presence of a transponder and in case of no data detection by an active demodulator among an amplitude demodulator and a phase demodulator included by the terminal, of selecting the other demodulator to detect the data.

9. (Cancelled).

10. (Previously Presented) An apparatus for controlling an electromagnetic field generated by an oscillating circuit, the apparatus comprising:

a demodulator to detect whether a signal is transmitted by a transponder in the electromagnetic field, and

a circuit to determine, in response to the demodulator detecting that a signal is not transmitted by a transponder in the electromagnetic field, whether a transponder is present in the electromagnetic field by comparing present values of variables linked to a current in the oscillating circuit and to a voltage across the oscillating circuit with predetermined values.

11. (Previously Presented) The apparatus of claim 10, wherein the circuit comprises means for comparing the present values of the variables with the predetermined values.

12. (Currently Amended) A method of controlling an electromagnetic field generated by an oscillating circuit, the method comprising:

(A) detecting whether a transponder is present in the electromagnetic field by comparing a present value of a parameter corresponding to one or more electrical properties of the oscillating circuit to a predetermined value of the parameter; ~~and~~

(B) if the comparison indicates that a transponder is present in the electromagnetic field, modifying an electrical property of the oscillating circuit in response to the detection; and

(C) determining that a data signal has not been generated by a transponder within the electromagnetic field,

wherein the act (A) is performed in response to the act (C).

13. (Previously Presented) The method of claim 12, wherein (A) comprises detecting that a transponder is in the electromagnetic field by determining that the present value and the predetermined value are different.

14. (Cancelled).

15. (Currently Amended) The method of claim ~~14~~12, wherein (C) comprises performing a first type of modulation that is either phase modulation or amplitude modulation, the method further comprising:

(D) in response to (A) and (C), switching from the first type of modulation to a second type of modulation, wherein the second type of modulation is either phase modulation or amplitude modulation and is a different type than the first type.

16. (Previously Presented) The method of claim 12, wherein (A) comprises detecting a demodulation gap in a detection of data transmitted from a transponder within the electromagnetic field.

17. (Previously Presented) The method of claim 12, wherein the one or more electrical properties include an electrical current in the oscillating circuit and a voltage across the oscillating circuit.

18. (Previously Presented) The method of claim 17, wherein the parameter is a ratio of the voltage to the current.

19. (Previously Presented) The method of claim 12, wherein the oscillating circuit comprises a variable capacitive element, and wherein (B) comprises adjusting a value of the variable capacitive element.

20. (Previously Presented) The method of claim 12, wherein the predetermined value of the parameter was measured and stored during an off-load operation of the oscillating circuit, while no transponder was present in the electromagnetic field.

21. (Previously Presented) The method of claim 12, further comprising:

(C) deactivating a phase regulation of the oscillating circuit,

wherein (B) comprises forcing an imaginary part of an impedance of the oscillating circuit to a predetermined value.

22. (Previously Presented) The method of claim 21, wherein the oscillating circuit includes a variable capacitive element,

wherein forcing the imaginary part of the impedance comprises forcing a value of the variable capacitive element.

23. (Previously Presented) The method of claim 21, further comprising:

(D) performing amplitude demodulation to determine that a data signal has not been generated by a transponder within the electromagnetic field,

wherein (B) includes forcing the imaginary part of the impedance of the oscillating circuit to a predetermined value measured and stored during an off-load operation of the oscillating circuit, while no transponder was present in the electromagnetic field.

24. (Previously Presented) The method of claim 21, further comprising:

(D) performing phase modulation to determine that a data signal has not been generated by a transponder within the electromagnetic field, wherein the predetermined value to which the imaginary part of the impedance is forced is a function of the position of the imaginary part with respect to a limiting value corresponding to a value measured and stored during an off-load operation of the oscillating circuit, while no transponder was present in the electromagnetic field.

25. (Currently Amended) An apparatus for controlling an electromagnetic field generated by an oscillating circuit, the apparatus comprising:

a first circuit to detect whether a transponder is present in the electromagnetic field by comparing a present value of a parameter corresponding to one or more electrical properties of the oscillating circuit to a predetermined value of the parameter; and

a second circuit to modify an electrical property of the oscillating circuit in response to the comparison indicating that a transponder is present in the electromagnetic field,

wherein the comparison indicating that a transponder is present in the electromagnetic field is indicative of detecting a demodulation gap in a detection of data transmitted from the transponder within the electromagnetic field.

26. (Previously Presented) The apparatus of claim 25, wherein the first circuit comprises means for detecting whether a transponder is present in the electromagnetic field by comparing the present value of the parameter corresponding to the one or more electrical properties of the oscillating circuit to the predetermined value of the parameter.

27. (Previously Presented) The apparatus of claim 25, wherein the second circuit comprises means for modifying an electrical property of the oscillating circuit in response to the comparison indicating that a transponder is present in the electromagnetic field.

28. (Previously Presented) The apparatus of claim 25, wherein the first circuit is operative to detect that a transponder is in the electromagnetic field by determining that the present value and the predetermined value are different.

29. (Previously Presented) The apparatus of claim 25, further comprising:

a first demodulator to determine that a data signal has not been generated by a transponder within the electromagnetic field,

wherein the first circuit is operative to detect whether a transponder is present in the electromagnetic field in response to the determination that a data signal has not been generated by a transponder within the electromagnetic field.

30. (Previously Presented) The apparatus of claim 29, wherein the first demodulator is operative to perform a first type of modulation that is either amplitude modulation or phase modulation, the apparatus further comprising:

a second demodulator operative to perform a second type of demodulation that is either phase demodulation or amplitude demodulation and is a different type than the first type; and

a selection circuit to select the output of the second demodulator in response to the determination by the first demodulator that a data signal has not been generated by a transponder within the electromagnetic field and the detection that a transponder is present in the electromagnetic field by the first circuit.

31. (Cancelled).

32. (Previously Presented) The apparatus of claim 25, wherein the one or more electrical properties include an electrical current in the oscillating circuit and a voltage across the oscillating circuit.

33. (Previously Presented) The apparatus of claim 32, wherein the parameter is a ratio of the voltage to the current.

34. (Previously Presented) The apparatus of claim 25, wherein the oscillating circuit comprises a variable capacitive element, and wherein the second circuit is operative to adjust a value of the variable capacitive element.

35. (Previously Presented) The apparatus of claim 25, wherein the predetermined value of the parameter was measured and stored during an off-load operation of the oscillating circuit, while no transponder was present in the electromagnetic field.

36. (Previously Presented) The apparatus of claim 25, further comprising:

a phase regulation circuit to regulate the phase of the oscillating circuit,

wherein the second circuit is operative to deactivate the phase regulation performed by the phase regulation circuit, and to force an imaginary part of an impedance of the oscillating circuit to a predetermined value.

37. (Previously Presented) The apparatus of claim 36, wherein the oscillating circuit includes a variable capacitive element, and wherein the second circuit is operative to force the imaginary part of the impedance by forcing a value of the variable capacitive element.

38. (Previously Presented) The apparatus of claim 36, further comprising:

an amplitude modulator, to determine that a data signal has not been generated by a transponder within the electromagnetic field,

wherein the second circuit is operative to force the imaginary part of the impedance to a predetermined value measured and stored during an off-load operation of the oscillating circuit, while no transponder was present in the electromagnetic field.

39. (Previously Presented) The apparatus of claim 36, further comprising:

a phase demodulator to determine that a data signal has not been generated by a transponder within the electromagnetic field,

wherein the predetermined value to which the imaginary part of the impedance is forced is a function of a position of the imaginary part with respect to a limiting value measured and stored during an off-load operation of the oscillating circuit, while no transponder was present in the electromagnetic field.

40. (New) A method of controlling an electromagnetic field generated by an oscillating circuit, the method comprising:

(A) detecting whether a transponder is present in the electromagnetic field by comparing a present value of a parameter corresponding to one or more electrical properties of the oscillating circuit to a predetermined value of the parameter; and

(B) if the comparison indicates that a transponder is present in the electromagnetic field, modifying an electrical property of the oscillating circuit in response to the detection,

wherein the comparison indicating that a transponder is present in the electromagnetic field is indicative of detecting a demodulation gap in a detection of data transmitted from the transponder within the electromagnetic field.

41. (New) A method of controlling an electromagnetic field generated by an oscillating circuit, the method comprising:

(A) detecting whether a transponder is present in the electromagnetic field by comparing a present value of a parameter corresponding to one or more electrical properties of the oscillating circuit to a predetermined value of the parameter; and

(B) if the comparison indicates that a transponder is present in the electromagnetic field, modifying an electrical property of the oscillating circuit in response to the detection,

wherein the one or more electrical properties include an electrical current in the oscillating circuit and a voltage across the oscillating circuit, and

wherein the parameter is a ratio of the voltage to the current.

42. (New) A method of controlling an electromagnetic field generated by an oscillating circuit, the method comprising:

(A) detecting whether a transponder is present in the electromagnetic field by comparing a present value of a parameter corresponding to one or more electrical properties of the oscillating circuit to a predetermined value of the parameter;

(B) if the comparison indicates that a transponder is present in the electromagnetic field, modifying an electrical property of the oscillating circuit in response to the detection; and

(C) deactivating a phase regulation of the oscillating circuit,

wherein the act (B) comprises forcing an imaginary part of an impedance of the oscillating circuit to a predetermined value.

43. (New) The method of claim 42, wherein the oscillating circuit includes a variable capacitive element,

wherein forcing the imaginary part of the impedance comprises forcing a value of the variable capacitive element.

44. (New) The method of claim 42, further comprising:

(D) performing amplitude demodulation to determine that a data signal has not been generated by a transponder within the electromagnetic field,

wherein (B) includes forcing the imaginary part of the impedance of the oscillating circuit to a predetermined value measured and stored during an off-load operation of the oscillating circuit, while no transponder was present in the electromagnetic field.

45. (New) The method of claim 42, further comprising:

(D) performing phase modulation to determine that a data signal has not been generated by a transponder within the electromagnetic field, wherein the predetermined value to which the imaginary part of the impedance is forced is a function of the position of the imaginary part with respect to a limiting value corresponding to a value measured and stored during an off-load operation of the oscillating circuit, while no transponder was present in the electromagnetic field.

46. (New) An apparatus for controlling an electromagnetic field generated by an oscillating circuit, the apparatus comprising:

a first demodulator to determine that a data signal has not been generated by a transponder within the electromagnetic field;

a first circuit to detect, in response to the determination that a data signal has not been generated by a transponder within the electromagnetic field, whether a transponder is present in the electromagnetic field by comparing a present value of a parameter corresponding to one or more electrical properties of the oscillating circuit to a predetermined value of the parameter; and

a second circuit to modify an electrical property of the oscillating circuit in response to the comparison indicating that a transponder is present in the electromagnetic field.

47. (New) The apparatus of claim 46, wherein the first demodulator is operative to perform a first type of modulation that is either amplitude modulation or phase modulation, the apparatus further comprising:

a second demodulator operative to perform a second type of demodulation that is either phase demodulation or amplitude demodulation and is a different type than the first type; and

a selection circuit to select the output of the second demodulator in response to the determination by the first demodulator that a data signal has not been generated by a transponder within the electromagnetic field and the detection that a transponder is present in the electromagnetic field by the first circuit.

48. (New) An apparatus for controlling an electromagnetic field generated by an oscillating circuit, the apparatus comprising:

a first circuit to detect whether a transponder is present in the electromagnetic field by comparing a present value of a parameter corresponding to one or more electrical properties of the oscillating circuit to a predetermined value of the parameter; and

a second circuit to modify an electrical property of the oscillating circuit in response to the comparison indicating that a transponder is present in the electromagnetic field,

wherein the one or more electrical properties include an electrical current in the oscillating circuit and a voltage across the oscillating circuit, and

wherein the parameter is a ratio of the voltage to the current.

49. (New) An apparatus for controlling an electromagnetic field generated by an oscillating circuit, the apparatus comprising:

a phase regulation circuit to regulate the phase of the oscillating circuit;

a first circuit to detect whether a transponder is present in the electromagnetic field by comparing a present value of a parameter corresponding to one or more electrical properties of the oscillating circuit to a predetermined value of the parameter; and

a second circuit to modify an electrical property of the oscillating circuit in response to the comparison indicating that a transponder is present in the electromagnetic field,

wherein the second circuit is operative to deactivate the phase regulation performed by the phase regulation circuit, and to force an imaginary part of an impedance of the oscillating circuit to a predetermined value.

50. (New) The apparatus of claim 49, wherein the oscillating circuit includes a variable capacitive element, and wherein the second circuit is operative to force the imaginary part of the impedance by forcing a value of the variable capacitive element.

51. (New) The apparatus of claim 49, further comprising:

an amplitude modulator, to determine that a data signal has not been generated by a transponder within the electromagnetic field,

wherein the second circuit is operative to force the imaginary part of the impedance to a predetermined value measured and stored during an off-load operation of the oscillating circuit, while no transponder was present in the electromagnetic field.

52. (Previously Presented) The apparatus of claim 49, further comprising:

a phase demodulator to determine that a data signal has not been generated by a transponder within the electromagnetic field,

wherein the predetermined value to which the imaginary part of the impedance is forced is a function of a position of the imaginary part with respect to a limiting value measured and stored during an off-load operation of the oscillating circuit, while no transponder was present in the electromagnetic field.